

clearly manifest here; indeed, the distance and the remoteness of this region from the economic centers of the total union even force them to pursue this policy. In this, a role is not only played by the basic thought of populating these remote but well-situated regions, but also of making them as self-sufficient and strong economically as possible. The opportunities which are given the Soviet Union here cannot be estimated. They are great; only time is required to exploit them. 185
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In connection with the above statement the unique position which the Far Eastern transportation network occupies within the Soviet Union as a whole, deserves to be brought out. A look at the map shows that the entire, complicated railroad network in the western part of the Soviet Union comes together into a single railroad line as it heads toward the Far East. This crosses the Yenisey at Krasnoyarsk and runs as far as Ulan-Ude in Transbaykal. Only here does it begin to split up and to develop into a transportation network, insofar as one can speak of such a thing in the Far East. On this single railroad line, which does, however, have two tracks, depends the entire connection of Transbaykal and the Far Eastern region with the rest of the Soviet Union. Even the completion of the Baykal-Amur line does not eliminate the bottleneck at Krasnoyarsk, and accordingly /15/, a certain self-sufficiency is the result of the development of the railroad network in the Far East. 496 •

Transbaykal and the Far Eastern region represent the extreme border position of the Soviet Union in East Asia. As remote border regions, they are really the Far East for the European part of Russia. One sees the sun rise and set eight times before one, coming from Leningrad in the Siberian Express, reaches Chita, the capital of Transbaykal, and another day and a half passes before one arrives in Vladivostok. More than 8,000 kilometers by air lie between the western and eastern borders of the Soviet Union. Chita is 6,236 kilometers by railroad from Moscow; Vladivostok is 9,333 kilometers from Moscow via Khabarovsk, and still 8,312 kilometers via the north Manchurian line by direct route. 131

But even within the Soviet Far East, a distance which seems extraordinary to the European has to be covered to travel from one end to the other. There are around 2,500 kilometers between the southwestern tip of Lake Baykal and the mouth of the Amur, and the airline from Pos'yet Bay, southwest of Vladivostok, to Cape Dezhnev on the Bering Strait is almost 5,000 kilometers long. Sakhalin Island

without any additional reasons. It must also be assumed as obvious that Buryat-Mongol relationships in the Soviet Union served as a model in the formation of the Mongolian People's Republic and its organization into a state, and also that thereby the influence of the Soviet Union has grown far beyond its political borders.

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Land Transportation

Transportation acquires a striking importance with the size of the area. The development has shown that the transportation installations were not created because there was a necessity based on the economy of the region itself, but rather that the transportation-political standpoint of the entire state was decisive for the various transportation installations. The Amur railroad and also the Ussuri railroad were for their part built through regions which were often completely uninhabited or settled only extremely slightly. Only with the construction and after the completion of these railroad lines did people stream in in larger numbers, and accordingly the railroads became pacemakers for the colonization and development of the economy. Even today it is still so. Connection with the transportation system is the necessary condition for winning new settlement areas and for exploiting the rich natural resources of this vast land.

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With the slight density of population, transportation installations, such as for example the railroads, which required a great expenditure of capital and labor, often /183/ prove themselves to be unsupportable economically, unless these installations correspond to another, higher point of view, or are built for the future in a far-sighted fashion. In both cases it is up to the power and the enterprising spirit of a great state organism to carry out mighty tasks of this type. That was the case with the old Russia and it is also the case with the Soviet Union. At any rate the slightness of the railroad network goes back to these reasons. In contrast to these, however, the transportation installations, whose introduction required only slight outlays of money, are much better developed. To this category belongs water transportation, whose present state, according to the judgment of Soviet specialists, exceeds even that of the European part of the USSR. Also in this category is air transportation.

The railroads are the main bearers of the traffic. The eastern part of the Trans-Siberian Railroad constitutes the main vein. It runs from Lake Baykal via Ulan-Ude and Chita across Transbaykal, and then,

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42 always at some distance from the Amur and the Ussuri, it runs to Vladivostok. In Karymskoye, east of Chita, the Manchurian line branches off from the Trans-Siberian Railroad. The Manchurian line leaves Soviet Russian territory after the border station of Orpor and runs via Harbin to the southeastern part of Manchuria. At Grodyekovo it again enters Soviet Russian territory and in Voroshilov (Nikol'sk-Ussurisk) it meets the Ussuri Railroad.

In terms of administration the railroad lines are under four directive bodies and bear different official names:

1. The East Siberian Railroad. The central administrative office is in Irkutsk. Its sphere stretches from Tayshet to Kizhi, and lies on the administrative border between the Buryat-Mongol ASSR and Chita Oblast. Under this directorate the total length of railroad lines, including side railroads, is 1,304 kilometers.

2. The Molotov Railroad. Its administrative seat is in Chita. Its administrative sphere extends from Petrovsk (the first station east of Kizhi) to the Ksen'yevka station on the upper course of the Black Uryun. The total length of the railroad line is 1,330 kilometers.

3. The Amur Railroad. Its administrative seat is in Svobodnyy. Its administrative sphere extends from Ksen'yevka up to but not including Arkhara station, which is east of Bureya. The total length of its railroad line is 1,498 kilometers.

4. The Far Eastern Railroad. Its administrative seat is in Khabarovsk. Its administrative sphere extends from Arkhara to Vladivostok. The total length of its railroad lines is 1,989 kilometers.

This purely administrative division is very impractical from a geographical point of view. Therefore from way back a division into three has seeped in, namely: 1. The Transbaykal Railroad from Mysovaya, where it leaves Lake Baykal, to Kuenga, where the railroad turns to the north from the valley of the Shilka and from here begins to follow the course of the Amur; 2. the Amur Railroad from Kuenga to /184/ Khabarovsk; and 3. the Ussuri Railroad from Khabarovsk to Vladivostok. The above classification of the individual railroads is used in this work.

Since the route via Manchuria (Harbin) to Vladivostok is about 1,000 kilometers shorter than the indirect route via Khabarovsk, the main traffic from the Soviet Union to the east takes the Manchurian route; and to the Amur and Ussuri railroads there remains only a secondary, more local rank. Since they, however, run through Russia's own territory, they receive the task of maintaining a second position, a

substitute line, which is put into action immediately if the first rail-
road line is disturbed for any reason. This was the case during the
period of Japanese rule in Manchuria from 1931 to 1945. It was during
this period that the pressing necessity of a second track for the eastern
part of the Trans-Siberian Railroad first arose. The second track for
the stretch from Ulan-Ude to Urusha (1,570 kilometers) was laid from
1933 to 1935; the stretch from Urusha to Khabarovsk (1,314 kilometers)
was laid from 1934 to 1936; and the stretch between Khabarovsk and
Vladivostok (768 kilometers) was not laid until 1936 to 1939. The
North Manchurian Railroad, on the other hand, was built with two
tracks from the beginning. Of greatest importance is the fact that the
Russian track width was not changed in Manchurian territory from 1931
to 1945, and, accordingly, the railroad line was available for the use
of the Soviet Union immediately after the end of World War II. In
the period from 1905 to 1945 the Japanese changed only the South
Manchurian Railroad (Harbin to Dairen) to the Japanese track width
(normal tracks), while the North Manchurian Railroad was always
traveled by Russian locomotives and Russian railroad cars. 496

The construction of the Transbaykal Railroad began in 1895
and was supposed to be completed in 1898. However, a flood, such
as Transbaykal had never experienced, caused such extensive damage
that it was only in 1900 that traffic could cover the entire stretch.
Construction of the line was very difficult. The ground in Transbaykal
is permanently frozen and thaws in the summer only to a depth of one
to two meters. As a consequence of this, the work had to be done
during the warm part of the year with dynamite under the thawed out
layer of earth; this turns the thawing masses of frozen earth into a thick
porridge /Brei/. The installation of water conduits was especially
difficult. In order to prevent freezing, the water pipes had to be laid
in wooden galleries which could be heated. Since according to the
construction specifications only Russian materials could be used, these
materials had to be procured in part via Vladivostok and Khabarovsk.
For this purpose state shipping was established on the Ussuri, Amur,
and on the Shilka as far as Sretensk. This resulted at the same time
in a permanent opening-up of this waterway. 497

The section from Sretensk to Khabarovsk was originally en-
visaged as a continuation of the Transbaykal Railroad to the east. The
marking /185/ out of this line, however, pointed up such great diffi-
culties and such unfavorable economic conditions that this plan was

in the construction, attained brilliant results not only because many millions of rubles remained in the country but also primarily because it fostered colonization. Many thousands of workers, who were recruited from Russia, learned to know the Amur country and settled in the land after the completion of the construction.

/186/ The Trans-Siberian Railroad leads through the most important localities in the Far Eastern region. The distances between the most important localities are as follows in railroad kilometers: Irkutsk--Ulan-Ude, 490 kilometers; Ulan-Ude--Chita, 554 kilometers; Chita--Khabarovsk, 1,428 kilometers; Khabarovsk--Vladivostok, 768 kilometers; Karymskoye--Otpor (border station), 366 kilometers; Karymskoye--Harbin--Vladivostok, 1,981 kilometers.

A number of branch railways lead from the main line to localities which are important economically or in terms of transportation. On the Transbaykal Railroad and the Amur Railroad the following, from west to east, are to be cited.

Ulan-Ude	--Naushki (Mongolian border)	225 kilometers
Petrovsk	--Balyaginsk (iron ore)	19 kilometers
Tolbaga	--Khalyarta (coal)	8 kilometers
Ingoda	--Ildigun (wood, agriculture)	52 kilometers
Priliskovyy	--Nerchinsk (city connection)	10 kilometers
Kuenga	--Sretensk (Shilka harbor)	55 kilometers
Pashennaya	--Bukachacha (coal)	73 kilometers
Skovorodino	--Dzhalinda (Amur harbor)	60 kilometers
Ushumun	--Chernyaye (Amur harbor)	38 kilometers
Kuybyshevka	--Blagoveshchensk (Amur harbor)	109 kilometers
Bureya	--Raychikhinsk (coal)	43 kilometers
Arkhará	--Innokent'yeva (Amur harbor)	35 kilometers
Izvestkovyy	--Ust'-Tyrma (coal)	190 kilometers

Of these lines the railroad from Ulan-Ude to Naushki is of the greatest significance. It was completed in 1939 and leads to the Mongolian border. Since then it has been lengthened to reach Ulan Bator (Urga), the capital of the Mongolian People's Republic. Then, in addition, various side lines have been created in the last few years. Thus a railroad line leads from Skovorodino over 150 kilometers to Tyndynskiy in the area around the upper course of the Gilyuy, and there is supposed to be a connection to the new Baykal-Amur Railroad (BAM). Also the Izvestkovyy--Ust'-Tyrma line named last in the above list

496 has since been extended via Chekunda to Ust'-Niman in the upper area of the course of the Bureya, and today this line has probably already reached the wolfram-molybdenum plant at the mouth of the Umalta. In addition to its local task of opening up the Bureya coal fields, this railroad line is also regarded as a cross connection from the Amur Railroad to the BAM, which, according to the original plan, was to cross the Bureya at Chekunda. Furthermore, two new railroad lines from the Amur Railroad to the Amur River have been built, one from Zavtaya to Poyarkovo, which at the same time offers a new opportunity for transporting things from the brown coal district of Raychinkhinsk; and one from Birobidzhan to Leninskoye.

The opening up of the lower Amur country was also served by a railroad only completed in the last few years; this line leads from Volochayevka, always at some /187/ distance from the Amur and on the left side of the Amur, to Komsomol'sk, the new industrial city with much promise. On the right bank of the Amur, approximately opposite Komsomol'sk, there begins then at Pivan the great wooden railroad line which crosses the Sikhote-Alin' and then leads in a southeasterly direction to Sovyetskaya Gavan' (Soviet Harbor) to the coast of the Sea of Japan. In Komsomol'sk a railroad ferry joins the two lines.

From the Ussuri Railroad several wooden railroad lines penetrate into the Sikhote-Alin'. The branch from Manzovka to Turly Rog should be named as the most important side line; for this line opens up the rich agrarian territory on the western side of the

Khanka Lake. The environs of Vladivostok, which are rich in coal, are crossed by several lines. The most important branches off in Ugol'naya north of Vladivostok toward Suchan in the east, and with two southern branches in Dunay and Nakhodka it reaches the sea coast. In the last few years still another railroad line has been built which branches off in the north from Vladivostok, extends approximately along the west coast of the Bay of Peter the Great and ends in Kraskino at the Pos'yet Bay.

The greatest railroad undertaking of the present is the Baykal-Amur Railroad, which has already been mentioned. It is abbreviated as BAM (Baykal-Amur-Magistrale). A veil of secrets surrounds this railroad, which has been under construction since 1938 with its length of around 3,500 kilometers and which, according to various reports, which, however, are not reliable, is supposed to have been completed. It begins at Tayshet station which lies on the Siberian Railroad between

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Kansk and Nizhneudinsk, and leads via the Angara to the upper Lena, which it leaves before the mouth of the Vitim in order then to follow the Vitim to the mouth of the Kalar. The line then crosses the Kalar Massif toward the east, crosses the Olekma at the mouth of the Nyuksha, and extends to the valley of the Gilyuy, along which it runs as far as the mouth of the Gilyuy at the Zeya. Then the railroad line follows the breach valley of the Zeya through the Tukuringra Mountain Range toward the south and finally turns again toward the east. The Seledmzha is crossed at Norsk, the point at which its navigability begins, and the Bureya is crossed at Chekunda, the center of the greatest hard coal deposit in the Far Eastern region, a deposit which is just beginning to be opened up. The BAM ends in Komsomol'sk on the Amur. Various cross lines are supposed to provide a connection with the Amur Railroad, and of these two have already been completed. In its course, the BAM cuts through forested areas which are rich in wood but are still completely untouched; in the northern part of the Amur country the BAM crosses through the most important gold fields; and it opens up important deposits of natural resources. The construction difficulties are supposed to be extraordinarily great. It is a railroad of the future, and it is to be expected that gradually a belt of settlements will come into being following the railroad line; the railroad workers set up in permanent dwelling places, even now constitute the basis for such a belt of settlements.

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Since the main railroad lines and also the main water veins /188/ cross through the zone of settlements in the longitudinal direction from west to east, built up land routes in this direction are rare. The old Siberian tract, which before the construction of the Trans-Siberian Railroad crossed through the entire region in the longitudinal direction, has long since lost its significance as an overland route and today serves as a local connection. The Ussuri section is an exception. In the last few years this has been rebuilt from Vladivostok to Khabarovsk as an automobile highway with a firm understructure to supplement the railroad line. On the quality of this route a report says that approximately 18 hours are required to travel the approximately 770 kilometer long stretch in a passenger motor vehicle. Furthermore the greatest attention in the last few years has been devoted to extending this highway: above all it has been extended from Khabarovsk to Komsomol'sk and undoubtedly represents the most important highway in the Far East. Most of the remaining land routes have more the character of feeder routes; but regardless of this these routes are of great economic importance

³⁶¹ this city almost 25 percent of the total population of the Buryat-Mongol
[37] ASSR have been brought together. Ulan-Ude has the largest locomotive
and railroad car factory in eastern Siberia; this factory supplies the whole
Far East. Supported by the Buryat's important breeding of livestock,
[25] the largest meat factory in Siberia, which produces canned meats, frozen
meats, and other preserved meat goods has come into existence. The
meat plant is in a position to process 400 cattle, 1,000 sheep, and 250
pigs a day. In 1940, 25 million cans of meat were sent out. Two large
[32] glass factories make Ulan-Ude also the supply center for crockery and
glass goods for the entire Soviet Far East. Lying on a river and a rail-
road, Ulan-Ude is favorably located in terms of transportation. At the
[36] same time Ulan-Ude is also the center of the Selenga water transportation,
for which river steamers and barks are built in the city's own dockyard.
Steamers not only carry traffic downstream but also carry it up the tri-
butaries, for example on the Chikoy, which runs through agricultural
regions. Of no less great importance is the floating of lumber, since
the tributaries of the Selenga come from areas rich in forests. Here
[33] again the lumber streams into Ulan-Ude, where it is processed in large
sawmills. Iliynsk, which lies on the Selenga 57 kilometers below the
capital, is also an important wood-processing center.

133 Ulan-Ude lies at the point where the Selenga Valley unites with
the valley of the Uda. As a contiguous graben depression, the two form
a morphological-tectonic unit, and in their natural state, they were
once a steppe. /215/ /Sketch Map of the Buryat-Mongol ASSR: ²/_A/216/
These two valleys today are the most heavily populated and economically
the most important regions in the Buryat-Mongol ASSR.

Above Ulan-Ude the valley of the Selenga soon expands into a
hilly to gently rolling, pure steppe landscape, which continues over
487 the border into Mongolia. It is traversed by the old caravan road, which
connects Ulan-Ude with the capital of the Mongolian People's Republic,
Ulan-Bator, the former Urga. At the border crossing Kyakhta (approx-
imately 10,000 inhabitants) lies opposite the Mongolian Atlan Bulak
491 (Chinese: Maimachen). This overland route, expanded into an auto-
mobile highway in the period of the Soviet Union, has since 1938 been
496 supplemented by a railroad line, which branches from the main line at
Ulan-Ude but does not follow the old road. Rather it goes around
Gusinoye Lake in a western arc and reaches the border at Naushki, ap-
proximately 20 kilometers west of Kyakhta. A lengthening of this
491 railroad to Urga was carried out in 1949. A land route usable throughout
the year by trucks branches off from Novo Selenginsk toward the west
into the river area of the upper Dzhide.

rolling with gentle rises toward the edges. In the ground lies a granite /33 foundation, over which is liparite and tuff, covered over by a thick layer of lacustrine deposits, which point to the formation of the steppe basin from a former lake (Gladtsin, 69). Striking is the present day

69. Gladtsin, I.N., Geomorfologicheskii ocherk Zabaykaliya /Geomorphological Sketch of Transbaykal/, Trudy of the Geographical Institute of the Academy of Science, (Moscow, 1938), p. 174.

dryness, which forms a sharp contrast to the forest landscapes surrounding the steppe island. The low position (620 to 680 meters above sea level) as a depression between the contiguous mountain chains, may well be the reason for the special climatic conditions prevailing here. The fertile steppe soil, in many cases designated as black earth, has led to thick settlement, and, accordingly, the grass steppe only rarely now shows itself in its original dress. The levelness of the steppe is interrupted only by flat, mostly dry valleys with gentle slopes. /224/ In the deeper places there appear damp meadows, often swamps, and also not uncommonly even salt-pans. The slopes of the valleys sloping [37] to the north are overgrown with birches, poplars, meadows, and bushes, especially if the valleys have the character of a ravine. The transition to the forest landscapes occurs quickly. However, the souther slopes remain free of forests the longest and often appear in contiguous taiga as small forest steppe islands. Toward the Shilka the steppe plain breaks off with a steep, heavily valleyed, high step, which from the river often gives the impression of a mountain land. Next to the dairy and meat economy, the cultivation of grain stands in first place in the agriculture of the steppe island. The economic center is Nerchinsk [347] with its mill plants, brandy and alcohol distilleries. In terms of transportation Sretensk has a better location, for there the regular Amur shipping begins. West of Sretensk in Kokuy there is a shipyard.

The Transbaykal Railroad runs from Nerchinsk on further on the 496 left shore of the Shilka as far as Kuenga, and from here a branch railroad leads to Sretensk. The main railroad line, which from here on bears the name of Amur Railroad, leaves the Shilka Valley at Kuenga and circumscribes the Shilkinsk Mountain Range in a great arc. Here 316 in the north, lying in a side valley of the Kuenga and connected by a railroad line, are the coal mines of Bukachacha, which in their production stand in first place in Transbaykal, and farther to the east around the Mogocha Station lie extensive gold fields.

There are Russian settlers only on the outer
 edge of the region in the valley plains of the main rivers; the entire, vast interior, on the other hand, is completely uninhabited.

The Manchurian Railroad branches off from the Karymskoye station between Chita and Nerchinsk. This railroad strikes the direct route to Vladivostok via Harbin. The last Soviet Russian station is Otpor, which /227/ lies opposite the Manchurian border. The railroad runs directly to the southeast and, in the process, crosses over all the mountain ridges almost at a right angle. After the Borshchovochnyy Mountain Range, there follows the Gazimur-Onon ridge, which reaches south of the Gazimur River to the Argun, and then the Erman, Nerchinskiy, Klichinskiy, and finally the Argun mountain ranges. All these mountain ridges run in the direction of Lake Baykal and run almost parallel to one another. The Gazimur-Onon ridge extends along the middle course of the Onon on the north side of the river until the break through of the river. The Gazimuro-Onon ends on the Argun between the Gazimur on the north and the Uryumkan on the south. It is never over 1,000 meters high. The Erman Mountain Range is already divided into two parts by the Tarey Basin which has no outlets. In the picture of the landscape of the entire region a gradual change is apparent from northwest to southeast, and also one from northeast to southwest.

From northwest to southeast, i.e., in the direction of the Manchurian Railroad, the ridges gradually become lower, the differences in height decrease. The coniferous forests and likewise the swamps disappear. A striking wealth of birches enters, covering first the ridges, then only the northern slopes, and finally making way for the pure steppe. In the process salt-pans can already appear in the depths.

To the northeast, toward the Argun, all the mountain chains become higher, the Erman Mountain range reaching up to 1,400 meters, the Nerchinskiy Mountain Range reaching up to 1,300 meters, and the Argun Mountain Range reaching 900 to 1,000 meters. In the regions whose waters empty into the Argun, especially in drainage areas of the Gazimur, Uryukan, and Urov, the land has the character of a medium mountain range with peaked heights, deeply etched river valleys, and larger relative differences in height (300 to 500 meters). The undeveloped water network with great drops and numerous stony current rapids and waterfalls points to a recent elevation of this region, whose landscape can be designated as the Argun type. Toward the southwest the absolute height of the ridges decreases, the relative differences become smaller (100 to 150 meters on the mean), the valleys become wide, the rivers form great arcs and numerous meanderings.

2 [i.e. in the area between the valley of the Ingoda, Chikoy and the Onon -- Khar'yst]

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133 permafrost, however, create great difficulties. Development of the area is hampered by the area's remoteness and the difficulty of gaining access to it, since the break-through valley of the Zeya toward the south represents the sole gateway to the depression. To date the [505] supplying of the area has been done on the water route as far as the locality of Zeya, for the Zeya River is navigable to this point. The [491] supplies are then brought by vehicles further up the river. The area around the upper course of the Gilyuy is crossed by the highway from Never to Yakutsk. This highway crosses the Tyndinsk, a tributary of the Gilyuy, at Tyndinsk. The new Baykal-Amur Railroad, coming from the Nyukzha valley, is also supposed to enter the valley of the Gilyuy at the same place and to follow the Gilyuy as far as the Zeya, [496] in order then likewise to use the Zeya's break-through valley as an exit toward the south. The laying of this railroad line through the Zeya-Gilyuy depression is expected to lead not only to better opportunities for exploiting the gold fields but also to the use of the rich supplies of wood in the forests, and finally also to better settlement of the area.

/240/ The depression of the upper Zeya and Gilyuy is cut off into a vast basin on the south by a watershed mountain chain. The Zeya is the sole river flowing off to the south in this basin. This mountain chain is regarded as a continuation of the Daur and the Shilka mountain ranges; it stretches from Transbaykal via the Olekminsk Stanovik to the depressions of the Amgun (left tributary of the lower Amur) (207). This entire line of mountain ranges was, according to

207. Tanfiliev, G.I., *Geografiia Rossii: Relief Aziatskoi Rossii /Geography of Russia: The Relief of Asiatic Russia/*, 2 vols., (Odessa, 1923), p. 250.

Ahnert (16), formed partly by faulting but principally and especially

16. Anert /sic/, E.E. *Kratkii geologicheskii ocherk Priamuria /Short Geological Sketch of the Amur Region/. Geological Research in the Gold Regions of Siberia, Vol. XVII. Petersburg, 1913.*

on the southern edge, by break formations. Within the Oldoy-Zeya Highland the chain of mountain ranges begins in the west with the Yankan Mountain Range, which lies between the upper courses of the

133 northern edge it represents.

The Oldoy Highland is the smallest part of the region as a whole, and it comprises the area between the Yankan Mountain Range and the Amur. Already from the region around the source of the Oldoy toward the south the landscape flattens out and dissolves into individual ridges, mountains, and valley areas, giving the overall impression of a mountainous and hilly landscape. Toward the south-east, between the Urkan and the Amur, the broad hill ridges gradually disappear altogether, and the landscape here flows into the so-called Amur-Zeya plateau, which already belongs to the greater landscape of the Zeya-Bureya plain area.

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496 The Oldoy Highland is traversed in the north by the Amur Railroad, from which a railroad line to the Amur harbor of Dzhalinga branches off in Skovorodino (more than 20,000 inhabitants), the seat of a railroad office. Thus, in terms of transportation, this region is quite well opened up. This is also true of the most heavily populated parts within the overall region. The alluvial sands of the rivers to the north of the Amur Railroad, especially the valleys of the upper Oldoy, and of the Great and Lesser Urkan, are rich in gold. The built-up highway which is mentioned above and which can be used throughout the year, leads from the station of Never (around 10,000 inhabitants). This highway crosses the Tukuringra Mountain Range and the Stanovoy in its western part and goes via the Aldan gold fields to Yakutsk. It reaches Tyndinsk in the area around the upper course of the Gilyuy. This important highway has recently been supplemented by a railroad line from Skovorodino to Tyndinsk, where there is a spur to the great Baykal-Amur Railroad (BAM). With this a direct cross-connection between the Amur shipping and the BAM is supposed to be created. The new railroad line, in addition, opens up new areas for settlement, just as the construction of the Amur Railroad has become a pacemaker for heavier settlement by an agricultural population. Also in the less swampy valley areas between the railroad and the Amur River agriculture is pursued relatively actively. Accordingly, a lively food industry and also machine building shops and repair shops have been able to develop in Skovorodino, which has already been named as the center of the Oldoy Highland. Brown coal, which is mined in the vicinity, is used as the raw material for energy. To the north of the city tin supplies [50A] have been determined. An airfield in the vicinity connects Skovorodino to the great airline running from Moscow to Khabarovsk to Vladivostok.

361 Only in the southeast in the triangle between the Amur and the lower Zeya is there an agricultural settlement covering an area of any size. In the rest of this region a zone of settlements with many gaps accompanies the Amur and the railroad.

•496 The Amur Railroad runs approximately along the middle of the plateau and uses the watershed exactly, since along the watershed there was, for understandable reasons, the best and the easiest opportunity for marking off. A branch railroad, 38 kilometers long, leads from Ushumun station to Chernyayevo on the Amur, in the center of a region with great prospects for the future, for here only a few years ago hard coal deposits were determined. These deposits stretch along the left side of the Amur between its tributaries, the Urinda and Magdagachi, i.e., approximately around the locality of Chernyayevo mentioned above. The coal is of Jurassic age and lies in individual anticlines, which stretch toward the northeast. Although, judging from individual tests, the ash content of the coal is supposed to be great, the deposits have a prominent significance because they lie in a region /243/ /Sketch Map of the Amur Oblast:/ which formerly had to be supplied with coal from a great distance. In some places the coal-bearing layers are broken through by granite laccolite and porphyry effusions, and thus the coal here has been transformed into valuable semi-anthracite and full anthracite. Nothing is known of the total supply in the deposit designated by the Russians as the "Upper Amur Coal Basin." There are numerous outcroppings on the Amur and in the individual river valleys. Very recently the mining of the coal deposits in the vicinity of Madgagachi has begun.

361 The principal locality in the northwestern part of the plateau is Magdagachi (approximately 10,000 inhabitants); the principal locality in the southeastern part is Shumanovskaya (approximately 25,000 inhabitants). Both of these towns lie on the Amur Railroad.

487 The Tygda station between Madgadachi and Ushumun has greater significance in terms of transportation. A land route leads from Tygda via Ovsyanka, which lies at the point where the Zeya and the Urkan flow together, to the Tukuringra break-through of the Zeya. This is the shortest land route connection from the Amur Railroad to the gold fields on the upper Zeya and the Gilyuy.

133 /244/ East of the lower Zeya begins the Zeya-Bureya Lowland, which stretches toward the east along the Amur over a broad area extending beyond the lower course of the Bureya. The end of this low plain is prepared by the high embankment of the Bureya Mountain

Region/. Pochvovedniie, 1911.

[133] The northern part of the Zeya-Bureya plain lies generally below 500 meters above sea level and declines toward the lower Zeya and the Amur, /247/ /Sketch Map:/ /248/ where the greatest part lies at less than 200 meters above sea level. At Blagoveshchensk the Amur has a height of 120 meters. In individual places the substratum comes out from the flatly deposited Tertiary layers in the form of individual rocks, which consist of granite, Jurassic conglomerates and Jurassic sandstone, or also of porphyry.

The great dampness of the Zeya-Bureya plain, which arises from the excessive summer rainfall, leads in the unlevel regions to hanging landslips and solifluction phenomena of manifold types, which cause great difficulties in the construction of roads and installation of railroads, especially when--as, for example, in the country of mountain spurs--permafrost appears. The peasant fights constantly against threatening swampiness by draining his land. Despite these difficulties, the area under cultivation is increasing continually. The swamps, which as a rule are covered with clusters of grass, are turned into hay fields by fires set off every year, and these hay fields in turn are then turned into cultivated land.

[361] Settlement is very thick, and in the valley area of the Zeya, Selezhdzha, and Bureya it penetrates farther and farther into the interior. In the plains one can often see from one village to the next one. The settlements differ in no respect from those in the Russian homeland. And when in mid-summer sunflower fields glow between the yellow gold of wheat fields, one might feel himself transported to southern Russia. The cultivation of soy beans and perilla, which here lays claim to a significant percentage of the area under cultivation, appears foreign, however. The railroad crosses the Zeya at Svobodnyy (10,000 inhabitants), where an active wood industry has developed. A branch railroad, which is 108 kilometers long, leads from Kuybyshevsk with its more than 10,000 inhabitants to Blagoveshchensk (58,700 inhabitants), the capital of the region. The city extends along the shore of the Amur for a distance of almost 8 kilometers, toward the mouth of the Zeya. The Zeya here is 2 kilometers wide and exceeds even the Amur into which it flows. The city is the center of the entire agricultural area and has numerous flour and oil mills. In addition, the processing of lumber also plays a large role. The lumber is floated here on the Zeya and the Amur. Opposite Blagoveshchensk,

on the Manchurian side, lies the city of Heino (Sakhalyan), from whence there is a spur to the railroad network of Manchuria. The area around the lower course of the Bureya has the same character in terms of landscape as do the plains on the Zeya. The nearness of the highland permits the basic rock to come out more often here. The population is likewise dense and in the valley of the Bureya penetrates farther toward the north into the highland. The center of the region is the little city of Bureya, which lies at the point where the railroad crosses the Bureya River. A railroad line, which is 43 kilometers long, branches off from here to Raychikhinsk, the center of the largest brown coal deposit in the Amur country. Zavitaya, from which a new railroad line has been built to Poyarkovo on the Amur, /249/ has acquired a growing importance during the most recent period. [446] •

The brown coal fields lie between the railroad and the Amur and stretch from the Bureya in the east to the Zavitaya in the west, covering an area of 600 square kilometers. Raychikhinsk and Kivdinskiy are the centers of the coal mining. The transporting of the coal is done for the most part by railroad to the Bureya station, where there are opportunities to transfer the goods to river shipping. 316

The northern part of the Zeya-Bureya plain is drained primarily by the Selemdzha. The population here decreases rapidly toward the north, and settlement is limited to the valley areas of the rivers. On the Zeya, settlement reaches to the town of the same name at the foot of the Tukuringra Mountain Range; and on the Selemdzha, settlement ends approximately at Norsk. Both rivers are regularly traveled by steamships as far as the localities named. With the new construction of the BAM, which goes from the middle Zeya and runs through the area toward the east and crosses over the Selemdzha at the locality of Norsk mentioned above, new prospects have opened up for the further development of these regions, which are favorable for settlement but which in the past were too remote. [505]

The Bureya Mountain Country

The Bureya Highland has a central position in the Amur country. It forces the Amur to make its large southern bend; and, in the south where it joins the Little Khingan, it makes a path to the east free for the Amur only in a narrow break-through valley. In the same place the Bureya Highland shoves itself like a wedge into the great depressions running along the Amur and separates the Zeya-Bureya plain in the 133

137 in constantly from the sea in the summer, have given these forests a peculiar appearance. The branches are covered with long lichen, which hang down like beards, and moss grows on the stems as far as the boughs. A thick layer of moss also envelops the earth, and with every step water springs from the damp cushion. In the deeper places and also in the middle part of the highland, larches then appear as forest-formers, and the forests gradually become purely larch forests, and also fill the valley areas as far as the middle courses of the great rivers and press far to the south. The reason for this can be seen above all in the fact that the cold air masses flow down into the valleys and thus prevent the expansion of other types of trees. Only on the lower courses of the rivers flowing toward the south do deciduous trees set in. The larch forests which cover the bulk of the Bureya Highland are economically the most valuable.

316 The valley of the Niman was once among the most famous of the gold fields in the Far East. But the deposits are already exhausted. In their place the gold fields in the area around the upper course of the Bureya have now appeared, but these cannot compete in yield with those of the Selemdzha. The valley of the Bureya serves as the connecting path to the gold dressing installations. When the water level is good, the Bureya can be used by steamers for 345 kilometers as far as the locality of Chekunda, and occasionally even as far as Umal'ta. From Chekunda down the greater drops already work so strongly against water vessels that from here on the boats as a rule have to be drawn by horses. The last part of the way then is traveled by car or with riding horses and pack horses. An extension of this route toward the east leads over a pass, which is more than 1,000 meters high, to the gold fields on the upper course of the Kerbi, a tributary of the Amgun, which already belongs to the lower Amur. This much-traveled old Bureya gold route has today for the most part lost the importance it once had, since rich deposits of molybdenum and especially of coal have been found in the valley of the upper Bureya and a railroad has been built there.

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316 There is molybdenum in the valley of the Umal'ta, a left tributary of the upper Bureya. Here a great molybdenum works has been erected in Ust'-Umal'ta. The hard coal deposits fall into two parts, into the deposit on the upper Bureya and the Tyrma deposit, which are separated from one another only by tectonic occurrences with succeeding erosion. For the /252/ opening up of these deposits a railroad line is being built from Izvestkovyy, which lies west of Birakan on the Amur Railroad. This new railroad line leads over the Bureya

Mountain Range to the upper course of the Tyrma and then follows this river to the point where it empties into the Bureya. The railroad had already been completed as far as Ust'-Tyrma in 1942. Since then the construction of this railroad, which now runs parallel to the course of the Bureya, has been continued via Chekunda to Umal'ta. With this an outlet has been created for Bureya coal toward the south to the Amur Railroad, but the waterway of the Bureya is also used to transport the coal away. The expansion of this waterway is being worked on. In addition, there is the fact that the Baykal-Amur Railroad also crosses the same region. This railroad leaves the Selezhdzha at Norsk, crosses the Turana Ridge and reaches the middle course of the Bureya at Chekunda, to continue further over the Bureya Mountain Range to Komsomol'sk.

The construction of both these railroads in the sphere of the Bureya Mountain Range has above all an industrial significance. Next to coal, wood is the most important item for transport which this region can supply. In the traffic going the other way, the bringing in of food is probably the main task of the railroads. The Bureya also plays a certain role in this connection; for, according to various reports, continuous loads of grain go up the river during the period when it is navigable. The supplying of the new Bureya coal region must be assured from outside because the Bureya valley itself is very unfavorable for agricultural settlement. Everywhere here the Bureya has the character of a mountain river. Its valley between Ust'-Umal'ta and Ust'-Niman is up to 3 kilometers wide, but the river, which here is very wild, regularly floods a part of this country and causes extensive swampiness. From Ust'-Niman to Chekunda the right bank is steep and rocky; the left bank is, to be sure, level, but it is taken up by swamps which are difficult to travel. Below Chekunda as far as the settlement of Paykan the valley narrows, and on both sides the rocky mountains come right down to the shore. Only shortly before leaving the mountain ranges does the valley meadow widen into an area favorable for settlement. Thus the prospects for agrarian settlement in the area of the Bureya valley are not very good, and it will require long years of difficult cultivation work before the new coal mining region will be able to supply its own food.

If we survey the entire Bureya Highland, then, it can be determined that, apart from the spottily occupied gold regions in the north and apart from the Bureya and Tyrma valleys which are now filling up with people in a limited area, the other regions are as good as

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563 lie at a distance from the Amur are as good as uninhabited and in many cases are also unknown. Besides the Goldi and Gilyak, who, being fishing peoples, live in fixed dwellings primarily on the Amur and its tributaries, there are reindeer-breeding Samaghir who traverse the region of the Gorin, and the Negidal of the Amgun region, who are smaller in number. The Olcha are diffused on the right side of the Amur. Findings of gold, which have been made on almost all the left tributaries of the lower course of the Amur, have given some spurs to settlement in very recent times. The rivers on which gold has been found are the Limuri, Pilda, Bichi, and it has also been found in Orel Lake as well as on the lower course of the Amgun.

[135] The most important localities on the lower course of the Amur are Komsomol'sk and Nikolayevsk. Komsomol'sk lies alone in a vast, unoccupied region of the left bank of the Amur. The city arose only after 1926 from the small fishing village of Perskoye; it was the creation of the Communist youth (Komsomol), from which it has received its name. By 1939 it already numbered 70,000 inhabitants, and today its population is estimated to be more than 150,000. The city has a large river harbor with an important shipyard in which sea-going ships are also built. The largest undertaking is the steel and rolling mill, "Amur Steel," which is supposed to have been expanded to an annual capacity of 500,000 tons of crude iron through the construction of three blast furnaces. The already existing oil refinery has been enlarged by the addition of a cracking installation. A second heat power plant is under construction, and a large water power plant was completed some time ago to supply the city with electricity. In addition, the city houses around twenty additional industrial undertakings and promises to become the economic center of the entire area around the lower Amur. Already several years ago the city was connected with the Amur Railroad west of Khabarovsk by a railroad line, which begins in Volochayevka. In order to counteract the difficulties of building a railroad in the damp Amur plain, the railroad was laid on the western edge of the plain and also goes around Lake Bolon' in the west. With this course, new dry areas were opened up to agriculture, and at the same time the rich supplies of wood in the forests /259/ have been brought closer to exploitation. Of greatest significance, however, is the fact that Komsomol'sk is the end of the BAM. By using this railroad the vast areas of the northern Amur country have in Komsomol'sk their nearest exit to the sea. However, the natural unfavorability of the mouth of the Amur has led to a

lengthening of the BAM via the Sikhote-Alin' to Sovyetskaya Gavan', which is the best natural harbor on the coast of the Gulf of Tatar. The railroad for a part of the way uses the middle course of the Khungari, a right tributary of the Amur, in whose basin a large Tertiary brown coal deposit was discovered in 1932. This deposit is supposed to be used to run the railroad. At present the railroad to Sovyetskaya Gavan' already plays an important role in the treating of lumber from the Sikhote-Alin', which is processed for export in a large lumber mill in the harbor city. 361
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Nikolayevsk with its approximately 30,000 inhabitants is the economic center in the region around the mouth of the Amur. It owes its importance above all to the wealth of fish in the neighboring parts of the sea and in the Amur. Accordingly, it has been able to develop into one of the largest centers of the fish-processing industry. The city cannot develop very well as a sea harbor because of the harsh climatic conditions--the ice-free period lasts only around 160 days--and the unfavorability of the mouth. The mouth of the river is closed off by a sand bar of great width, which enables only those ships to pass which have a draught of up to 3.50 meters. In addition, there is the fact that the "Amur-Liman" itself is very flat, has many shallows, and thus permits sea-going ships to travel on it only in a few natural canals. Thus only smaller coastal vessels can get into the Amur, while larger sea-going ships must be unloaded on the open sea and their goods transferred to river vessels. For many years they have been in the process of creating a suitable waterway in the Amur, but the difficulties appear to be too great. Above all the natural deposit of bar sand again and again destroys the work of man. [28]
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The Sikhote-Alin'

The Sikhote-Alin' with its mountains fills the entire area from the mouth of the Amur on the north to the steep break at the Bay of Peter the Great. In contrast to this vast expanse, the narrow depression which extends at the western foot of the Sikhote-Alin' and which only in the south has extensive plains, appears to be of subordinate importance, particularly, too, because spurs of the Sikhote-Alin' not uncommonly penetrate almost to the Ussuri, and individual mountains of the Sikhote-Alin's border steps which traverse the entire land, appear even in the plain. Nevertheless, the smaller depression has the greater significance, for in it sits the bulk of the population, and in it 133

cultivated plants also flourish with great success. Very recently new sowing and cultivation machines have been employed by the Soviet in the entire Far Eastern region, which is damp in the summer. These machines take account of all the conditions of that area. In the expansion of the cultivated areas devoted to soy beans, rice, beans, millet, etc., it has been shown that there has been more conversion to these in more recent times, following natural conditions. The noxious fungus, which prefers to attack the European types of grain, such as wheat, barley, and oats, has already been pointed out. This grain disease occurs in those damp warm regions in especially rainy years. As Arved Schultz (181) has observed, it is very characteristic.

181. Schultz, A. Das Ussuri-Land./The Ussuri Country/. Königsberg, Prussia, 1932.

that the fields of the Korean and Chinese peasants are attacked less than the fields of the Russians. There must, therefore, also be some reasons for this. In addition the fight against the Fusorien, of which a total of 22 types have been determined to date, has been taken up by the Soviet.

In contrast to the little populated eastern and southern sides of Khanka Lake, the Tertiary hilly country to the west of the lake is thickly populated and is among the best agricultural regions. A railroad line, which is 127 kilometers long, leads from the Ussuri Railroad into this region and ends right on the border in Turiy Rog at the north-eastern end of the lake. On the eastern side of Khanka Lake, the cultivated zone, which continues from the north without interruption, follows the Ussuri Railroad in a broad line, and with broad spurs into the valley of the Daubikhe and Ulakhe, the cultivated zone also penetrates toward the east into the mountain range. South of the lake the cultivated zone takes up the entire area from the Manchurian border to the mountain spurs of the Sikhote-Alin' and extends in an area of almost equal width via the Suyfun depression toward the south to the coast, where on the west side of the Bay of Peter the Great it extends farthest to the south in the coastal plain.

The watershed between the Ussuri and the Suyfun is flat and scarcely makes an appearance morphologically. The Suyfun itself comes from Manchuria and crosses the border almost exactly at 44° latitude. Then it turns immediately toward the south to the sea. The valley area of the river is level and is accompanied on both sides

these the wood industry should be mentioned in first place. It is concentrated above all in Shkotovo (approximately 10,000 inhabitants) and Tigrovka (approximately 5,000 inhabitants), both of which lie on the railroad line to Suchan. The wood industry is also concentrated in Okeanskaya (approximately 2,300 /277/ inhabitants) to the north of Vladivostok, where a large wood factory delivers veneer wood for export. 361
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The industry in Vladivostok, like industry generally in the southern Ussuri country, is based on coal, which is on hand here in rich measure. Besides the various smaller coal mining localities, Artem and Suchan should be mentioned here as the principal localities producing coal. Already by 1938 the coal mined in Artem exceeded that mined in Suchan by threefold, and since then coal mining in Artem has been very much further increased. To Artem belong also the two coal districts, Ugol'naya and Trudovaya. The new railroad line, which leads along the western coast of the Bay of Peter the Great to Pos'yet and Kraskino, connects the most important coastal localities, which above all pursue the catching of fish. In the same region there are some sovkhos for breeding stags at Peschanaya, in Krabbe, and on the Gamova Peninsula. 316
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Sakhalin Island

Sakhalin came to Russia through the treaties of Aigun (1858) and of Peking (1860). However, until 1871 Russia had to share possession of the island with Japan, which in early times had already erected numerous factories in the southern part of the island. Through the unhappy Russo-Japanese War, Russia lost the southern half of the island to Japan. The fiftieth latitude was determined as the boundary line. The outcome of World War II brought the Soviet Union again in possession of the entire island. 648

Sakhalin covers 80,000 square kilometers and stretches from north to south in an almost meridional direction for about 1,000 kilometers. Once feared as a prisoners' colony of the Czarist empire, the island is notorious for its raw climate. The famous Russian writer A. Chekhov writes, "Sakhalin has no climate at all; the weather is eternally bad and gloomy." The island owes this unhappy reputation to the influence of the cool Sea of Okhotsk, to which the bulk of the island is fully given over. The greatest part of the island is covered with thick forests, which recall the taiga of Siberia. Along the coast [31]
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